

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of monitoring expression of a target gene, wherein the host is an animal or a yeast whose PHM4 gene is knocked out, the method comprising the steps:

(A) wherein the host is an animal:

(1) preparing a plasmid in which a polyphosphate kinase (PPK) gene is connected in-frame and downstream of the target gene;

(2) introducing the plasmid into a host cell, a tissue, or an organ, and selecting a transformant;

(3) culturing the selected transformant, and inducing expression of the PPK gene; and

(4) placing the transformant in which the expression of the PPK gene is induced into a ~~device for measuring NMR~~ a NMR measurement equipment, quantifying ~~[[the]]~~ accumulation of polyphosphate having a ~~mean value strand length~~ equal to or less than 50 mer in the mean value and produced by the transformant after the expression has been induced, by ~~preparing a real-time performing~~ one-dimensional NMR ³¹P-NMR measurement profile non-destructively and in real time, and/or performing real-time ¹H-

NMR imaging non-destructively in real time by NMR, without adding an exogenous substrate; or

(B) wherein the host is a yeast whose PHM4 gene is knocked out:

(1) preparing a plasmid in which a PHM4 gene is connected in-frame downstream of a target gene;

(2) introducing the plasmid into a host cell, a tissue, or an organ, and selecting a transformant;

(3) culturing the selected transformant, and inducing expression of the PHM4 gene; and

(4) placing the transformant in which the expression of the PHM4 gene is induced into a NMR measurement equipment, quantifying the accumulation of polyphosphate having a strand length equal to or less than 50 mer in the mean value and produced by the transformant after the expression has been induced, by performing one-dimensional ^{31}P -NMR measurement non-destructively and in real time, and/or performing ^1H -NMR imaging non-destructively in real time by NMR, without adding an exogenous substrate.

2-9. (canceled)

10. (currently amended) A method for screening various types of agents which inhibit or promote expression of translation products of a target gene; said wherein a host is either an animal or a yeast whose PHM4 gene is knocked out, the method[.]] comprising the steps:

(A) where a host is an animal;

- (1) preparing a plasmid in which a polyphosphate kinase (PPK) gene is connected in-frame and downstream of the target gene;
- (2) introducing the plasmid into a host cell, a tissue, or an organ, and selecting a transformant;
- (3) culturing the selected transformant in the presence ~~[[and]]~~ or absence of a test substance without adding an exogenous substrate, and inducing expression of the PPK gene; and
- (4) placing the transformant in which the expression of the PPK gene is induced into ~~a device for measuring NMR~~ a NMR measurement equipment, quantifying the accumulation of polyphosphate having a ~~mean value~~ strand length equal to or less than 50 mer in the mean value and produced by the transformant after the expression has been induced, by ~~preparing-performing a real-time~~ one-dimensional-NMR ³¹P-NMR measurement profile non-destructively~~[[.]]~~ and in real time by NMR, and/or performing ~~real-time-¹H-NMR~~ imaging non-destructively in real time by NMR, without adding an exogenous substrate; and
- (5) ~~comparing/evaluating~~ the accumulation of polyphosphate in the presence and absence of the test substance and accumulation of polyphosphate in the absence of a test substance, and screening ~~identifying~~ agents inhibiting or promoting the expression of translation products of the target genes; or

(B) where a host is a yeast whose PHM4 gene is knocked out:

- (1) preparing a plasmid in which a PHM4 gene is connected in-frame and downstream of a target gene;

(2) introducing the plasmid into a host cell, a tissue, or an organ, and selecting a transformant;

(3) culturing the selected transformant in the presence or absence of a test substance without adding an exogenous substrate, and inducing expression of the PHM4 gene;

(4) placing the transformant in which the expression of the PHM4 gene is induced into a NMR measurement equipment, quantifying accumulation of polyphosphate having a strand length equal to or less than 50 mer in the mean value and produced by the transformant after the expression has been induced, by performing one-dimensional ^{31}P -NMR measurement non-destructively and in real time, and/or performing ^1H -NMR imaging non-destructively in real time by NMR, without adding an exogenous substrate; and

(5) comparing/evaluating accumulation of polyphosphate in the presence of a test substance and accumulation of polyphosphate in the absence of a test substance, and screening agents inhibiting or promoting expression of translation products of the target genes.